Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte YOSHIKI TAKEOKA, MIKIO WATANABE,
FUMIHIRO FUNAZAKI, and HIROYUKI KURASE

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Appeal No. 2002-1735
Application No. 08/903,878

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HEARD: May 22, 2003

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Before HAIRSTON, FLEMING, and BARRY, *Administrative Patent Judges*.

BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 1-18 and 39-41. The appellants appeal

therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The invention at issue on appeal concerns a printer controller and a printer

connected by a bus. The printer controller supplies the printer with image data via the

bus; the printer prints an image, which is represented by the image data, at a constant

speed. (Spec. at 1.)

Conventionally, parallel communication via a Centronics interface or a Small

Computer System Interface and serial communication via a RS-232C, a RS-422, or an

Universal Serial Bus are used to transmit image data from a printer controller to a

printer. According to these protocols, explain the appellants, image data are

transmitted from the printer controller to the printer irrespective of the printing speed of

the printer. (*Id.*) Consequently, they add, the printer must be provided with enough

storage capacity to store image data representing at least one frame of an image (the

image printed on one sheet of paper). (*Id.* at 1-2.)

In contrast, the appellants' printer controller sends a start signal to an associated

printer. (*Id.* at 67.) Upon elapse of a fixed time following transmission of the signal, the

printer controller "isochronous[ly],"[1] (*id.*), transfers image data to be printed to the

printer. Because the image data are transferred "from the printer controller to the

printer at [a] fixed period, printing can be done at a constant speed without requiring

that the printer be provided with an image memory for storing image data representing

one frame of an image." (*Id.*) The requirement for smaller storage capacity, "lower[s]

the cost of the printer." (*Id.* at 6.)

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[1]"With isochronous transfer, data referred to as cycle-start packet data [are] in principle generated at an isochronous cycle (125 µs) by any of a plurality of nodes connected by a bus. Data [are] transmitted from a certain node (this node is a cycle master, as will be described later) to another node every isochronous cycle." (Spec. at 2.)

A further understanding of the invention can be achieved by reading the following

claim.

9. A printer comprising:

a buffer memory possessing a fixed image-data storage capacity smaller than a quantity of image data representing one frame of an image, said buffer memory temporarily storing the image data;

a printing controller for reading out the image data that has been stored in said buffer memory and printing an image, which is represented by the image data read out, at a constant speed; and

a storage controller for storing applied image data in said buffer memory, the image data being stored in said buffer memory so that said buffer memory is not emptied, irrespective of being read out for printing at the constant speed.

Claims 1, 8-10, 17, 18, and 39-41 stand rejected under 35 U.S.C. § 112, ¶ 2, as

indefinite. Claims 9, 18, and 41 stand rejected under 35 U.S.C. § 103(a) as obvious

over U.S. Patent No. 5,619,623 ("Takayanagi") and U.S. Patent No. 5,654,804

("Hattori"). Claims 1, 4-6, 8, 10, 13-15, 17 and 39-40 stand rejected under § 103(a) as

obvious over Takayanagi, U.S. Patent No. 5,710,587 ("Suzuki"), and Hattori. Claims 2-

3, 7, 11-12 and 16 stand rejected under § 103(a) as obvious over Takayanagi, Suzuki,

Hattori, and U.S. Patent No. 5,467,434 ("Hower").

OPINION

Our opinion addresses the rejections in the following order:

- indefiniteness rejection of claims 1, 8-10, 17, 18, and 39-41
- obviousness rejections of claims 1-18 and 39-41.

Indefiniteness Rejection of Claims 1, 8-10, 17, 18, and 39-41

Rather than reiterate the positions of the examiner or the appellants *in toto*, we address the main point of contention therebetween. The examiner asserts, "the phrase 'a fixed storage capacity smaller that quantity of image data . . .' renders the claim[s] indefinite because it does not particularly point out or distinctly claim how fixed an image data capacity is in order to be smaller than a quantity of image data representative [sic] one frame of the image as claimed." (Examiner's Answer at 13.) The appellants argue, "the Specification indicates . . . on page 31, lines 21-22, there is a statement that 'memory 26 that [sic] is capable of storing only a few lines of image data'. This phrase clearly identifies a fixed memory because it can only store a few lines of image data and thus cannot expand. " (Reply Br. at 2.)

"The test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. *Orthokinetics Inc., v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, Section 112 demands no more. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1385, 231 USPQ 81, 94 (Fed. Cir. 1986)." *Miles Labs., Inc. v. Shandon Inc.*, 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993).

Here, claims 1, 8-10, 17, 18, and 39-41 specify in pertinent part the following

limitations: a printer featuring "a buffer memory possessing a fixed image-data storage

capacity smaller than a quantity of image data representing one frame of the image. .

. ." As argued by the appellants, the specification discloses that "[p]rinting at a constant

speed is made possible merely by providing a FIFO memory 26 that is capable of

storing only a few lines of image data." (Spec. at 31.) Read in light of this disclosure,

one skilled in the art would understand that the limitations limit the image-data storage

capacity of a printer's buffer to be no larger than that required to store a few lines of

image data. Therefore, we reverse the indefiniteness rejection of claims 1, 8-10, 17,

18, and 39-41.

Obviousness Rejection of Claims 1-18 and 39-41

We again address the main point of contention between the examiner and the

appellants. Admitting that "Takayanagi et al. do not explicitly state that the fixed

storage of a printer's buffer memory has a capacity smaller than a quantity of one frame

of the image data," (Examiner's Answer at 3), the examiner alleges, "Hattori teaches

that a fixed storage of a printer's buffer memory has a capacity smaller than a quantity

of one frame of the image data, so that the buffer memory is not emptied when the

image data is transferred to that buffer memory of the printer (col. 1, lines 47-49; col. 3,

lines 6-8 and col. 7, lines 14-20)." (*Id.* at 3-4.) The appellants "submit that Hattori is

directed to a printer *with an expandable image buffer* (see the title for example)."

(Appeal Br. at 8.)

"Analysis begins with a key legal question -- *what* is the invention *claimed*?"
Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed.
Cir. 1987). In answering the question, "the Board must give claims their broadest
reasonable construction. . . ." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664,
1668 (Fed. Cir. 2000).

As mentioned regarding the indefiniteness rejection, independent claims 1, 8-10,
17, 18, and 39-41 specify in pertinent part the following limitations: a printer featuring "a
buffer memory possessing a fixed image-data storage capacity smaller than a quantity
of image data representing one frame of the image. . . ." Giving the independent claims
their broadest, reasonable construction, the limitations require that the image-data
storage capacity of a printer's buffer can neither be expanded nor contracted.

Having determined what subject matter is being claimed, the next inquiry is
whether the subject matter would have been obvious. "In rejecting claims under 35
U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie*
case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956

(Fed. Cir. 1993)(citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444

(Fed. Cir. 1992)). "'A *prima facie* case of obviousness is established when the

teachings from the prior art itself would . . . have suggested the claimed subject matter

to a person of ordinary skill in the art.'" *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529,

1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143,

147 (CCPA 1976)).

    Here, the examiner admits that "Takayanagi et al. do not explicitly state that the

fixed storage of a printer's buffer memory has a capacity smaller than a quantity of one

frame of the image data. . . ." (Examiner's Answer at 3.) Furthermore, we are

unpersuaded that the addition of Hattori cures the admitted deficiency of Takayanagi.

"[A] prior patent must be considered in its entirety, i.e., as a **whole**, including portions

that would lead away from the invention. . . ." *Panduit Corp.*, 810 F.2d 1561, 1568,

1 USPQ2d 1593, 1597 (citing *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d

1540, 1550, 220 USPQ 303, 311 (Fed. Cir. 1983)). Here, although the first passage of

Hattori cited by the examiner discloses that a "video band buffer has a fixed memory

capacity for 128 raster scan lines (i.e., about 1/20 of a page)," col. 1, ll. 47-49, the

passage explains that the capacity is expandable. Specifically, **the buffer "can be

expanded** beyond this capacity when needed." *Id*. at ll. 49-50 (emphasis added). For

their part, the second and third passages relied on by the examiner also teach

expandable buffers. To wit, "[w]hen the occurrence of the print overrun is detected

during print processes of dot image data, **the storage capacity of the print image**

buffer is expanded according to the data processing load of the compressed print data

stored in each band of the intermediate buffer," col. 2, l. 67 - col. 3, l. 3 (emphasis

added); "[w]hen the load is greater than the threshold value K, the buffer capacity of **the**

print image buffer 69 expands into the expansion print image buffer 68 so that the

storage region for storing bit image data can be expanded." Col. 7, ll. 24-27 (emphasis

added).

The examiner fails to allege, let alone show, that the addition of Suzuki or Hower

cures the aforementioned deficiency of Takayanagi and Hattori. Absent a teaching or

suggestion of an image-data storage capacity of a printer's buffer that can neither be

expanded nor contracted, we are unpersuaded of a *prima facie* case of obviousness.

Therefore, we reverse the obviousness rejections of claims 1-18 and 39-41.

CONCLUSION

In summary, the rejection of claims 1, 8-10, 17, 18, and 39-41 under 35 U.S.C.

§ 112, ¶ 2, is reversed. The rejections of claims 1-18 and 39-41 under § 103(a) are

also reversed.

REVERSED

KENNETH W. HAIRSTON   )
Administrative Patent Judge   )
)
)
)
) BOARD OF PATENT
MICHAEL R. FLEMING   )   APPEALS
Administrative Patent Judge   )   AND
) INTERFERENCES
)
)
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LANCE LEONARD BARRY   )
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APPLICATION NO. 08/903,878

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APJ FLEMING

APJ HAIRSTON

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DRAFT SUBMITTED: 24 Jan 04

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